

ANNOTATED LIST OF SEED PLANTS OF SINGAPORE (V)*

by

HSUAN KENG

Department of Botany, University of Singapore

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* Continued from Gdns' Bull. Sing. 28: 237-258, 1976.

II. ANGIOSPERMAE-DICOTYLEDONS (Continued)

57. PROTEACEAE

Helicia excelsa (Roxb.) Bl.

Tree; racemes erect; densely covered with dark red soft hairs; in forests; Chua Chu Kang, Kranji, Mandai Road (*Sinclair 40049*).

Hel. petiolaris Benn.

Tree, glabrous; racemes thick, angled; Bukit Mandai, Changi (No specimens available).

Hel. robusta R. Br. ex Wall.

Tree, glabrous; racemes stout, lax; Bukit Timah, Gardens' Jungle (No specimens available).

58. PIPERACEAE

Key to the genera

- A. Low herbs, erect; leaves without stipules *Peperomia*
 A. Mostly woody plants, climbing or erect; stipules present, joined to the leaf-stalk *Piper*

Peperomia pellucida HBK.

Tiny herb; stem and leaves succulent and translucent; flowers very small and simple, in long spikes. A common garden weed, native of S. America.

Pep. sandersii DC. var. *argyreia* Bailey

Herb; leaves ovate, with 9 broad white bands between the veins. This and a few other species are sometimes cultivated as pot plants.

Piper betle L.

The leaves of this plant (known as betel pepper) together with betel nut (*Areca catechu* L.), are used for chewing. Native of E. and C. Malesia. Vern. *Sireh*, .

Pip. caninum Bl.

Slender climber or small trees; leaves variable in shape and size; common in woods; Seletar, Gardens' Jungle (*Chew 1467*), Kranji, Siglap, Pulau Tekong. Vern. *Sireh utan*.

Piper chaba Hunter

Climbing, glabrous; leaves oblong or ovate; near and almost identical with *Pip. betle* from the Malay Islands. Vern. *Bakek*.

Pip. flavimarginatum C. DC.

Woody climbers or trees; leaves ovate; Chua Chu Kang, Bukit Timah (*Corner 34996*).

Pip. lanatum Roxb.

Slender climber; Ponggol (*Ridley, s.n.* in 1905). Prob. not specifically distinct from *Pip. caninum*.

Pip. maingayi Hook. f.

Climber; leaves elliptic-lanceolate; rarely flowering; common; Bukit Timah, Gardens' Jungle, Chua Chu Kang.

Pip. minatum Bl.

Climber; fruit spikes red; in woods; Bukit Mandai, Tuas, Chua Chu Kang, Reservoir Areas. Vern. *Sireh Ayer*.

Pip. muricatum Bl.

Erect herb or shrubby; stem and leaves hairy; in woods, not common; Bukit Timah, Chua Chu Kang, Jurong.

Pip. nigrum L.

A climbing shrub of the Malabar Coast of India. Pepper of commerce is the dried and ground fruits of this plant; black pepper is the whole dried fruit, and white pepper is the fruit which has been retted in water and the mesocarp removed. Vern. *Lada hitan* 胡椒

Pip. pachyphyllum Hook. f.

Glabrous climber; leaves broadly ovate; in forests; Bukit Timah, Gardens' Jungle.

Pip. pedicellosum Wall.

Woody climber; leaves elliptic ovate; in woods; Chua Chu Kang.

Pip. porphyrophyllum N. E. Br.

Slender; leaves ovate-cordate, deep green spotted silver and pink; rarely fruiting; in woods; Bukit Timah, Seletar, Gardens' Jungle (*Hullett 397*).

Pip. protractum C. DC.

Erect shrubby; leaves oblong; in woods; Jurong, Chua Chu Kang.

Pip. ribesioides Wall.

A climber; leaves ovate-oblong; not common; in Reservoir Woods (*Sinclair 40227*).

Piper sarmentosum Roxb.

Erect herb, with long runners; common in villages and shady places as a weed. Vern. *Chabei*, *Kadok*.

59. CHLORANTHACEAE

Chloranthus elatior R. Br. ex Link

Shrublet, with slender spikes of white flowers and translucent white berries; in damp ravine in jungles, formerly locally abundant; Bukit Timah (*Holtum* 19791), Bukit Mandai, Kranji, Jurong. Called *Chl. officinalis* Bl. in Ridley's Flora.

Chl. spicatus (Thunb.) Makino

A pot plant growing for its pale yellow, fragrant flowers 金粟蘭; never set fruit under local conditions; propagate vegetatively by division. Also called *Chl. inconspicuus* Swartz.

60. CASUARINACEAE

Casuarina equisetifolia J. R. & G. Forst.

Tall tree with green needle-like branchlets; leaves reduced to whorled tiny scales; often planted but possibly wild, originally between Tanjong Rhu and Changi (*Hullett* 501). Vern. Ru, 木麻黄 (available).

Cas. nobile T. C. Whitmore

A beautiful tree with a cone-shaped crown, superficially like a conifer, native of Borneo. Several other species are occasionally planted, these including *Cas. glauca* Sieb. from Australia, *Cas. nodiflora* Thunb. (= *Cas. rumphiana* Miq.) from New Caledonia and *Cas. sumatrana* Jungh. & DeVriese. from W. Malesia. The last two species together with *Cas. nobile* are sometimes classified under a separate genus *Gymnostoma*.

61. SALICACEAE

Salix babylonica L.

A small tree with slender drooping, light-green twigs. Native of China; all the trees planted were probably originated from the cuttings of a male tree; occasionally producing male catkins. 垂柳

Salix tetrasperma Roxb.

Less common than the above; twigs and leaf-stalks reddish on the upperside; native of S. India.

62. FAGACEAE

Key to the genera

1. Fruit triangular or irregularly ovoid, completely enclosed in a spiny cupule which splits open to expose 1–3 nuts *Castanopsis*
1. Fruit ovoid, conical or cylindrical, cupule rarely completely enclosing the fruit, not splitting, containing a single fruit (acorn).
 2. Leaf-stalks thickened throughout their length; midrib always raised above; margin rarely toothed; stigma tiny *Lithocarpus*
 2. Leaf-stalks usually thickened at base; midrib often sunken above; margin often toothed; stigma a big head *Quercus*

Castanopsis inermis (Lindl. ex Wall.) Benth. & Hook. f.

Big tree; cupule 4-angled with lines of short blunt warts in rings around each angle; cooked fruit edible.

Cast. lucida (Nees) Soepadmo

Big tree; cupule splitting into 4 valves, the valves deeply ridged; Gardens' Jungle, Bukit Timah, Sembawang, Bukit Mandai. Called *C. hulletti* King in Ridley's Flora.

Cast. malaccensis Gamble

Cupule covered with long sharp branched spines; Tuas.

Cast. nephelioides King ex Hook. f.

Cupule flattened, covered with short ridges and warts; rare; Bukit Timah, Pulau Damar.

Cast. megacarpa Gamble

Big tree; cupule large, round to ellipsoid, covered with long branching spines; Bukit Timah, Gardens' Jungle. Vern. *Berangan Gajah*.

Cast. shefferiana Hance

Tree; cupule densely covered with short stout spines, splitting by 4 valves; Gardens' Jungle, Changi. Called *C. andersonii* Gamble in Ridley's Flora.

Cast. wallichii King ex Hook. f.

Tree; cupule round, covered with triangular, sharp-tipped spines; common in woods; Gardens' Jungle, Bukit Timah, Chua Chu Kang, Changi.

Lithocarpus bennettii (Miq.) Rehd.

Cupule thin flat, with short stout base; fruit conic-ovoid; in woods; Seletar, Holland Road (*Ridley, s.n.* in 1899). All the *Lithocarpus* species were classified under *Pasania* in Ridley's Flora and under *Quercus* in Corner's Wayside Trees.

Lith. cantleyanus (King ex. Hook. f.) Rehd.

Cupule thin saucer-shaped with ring-like flanges; fruit flattened; Changi, Gardens' Jungle, Bukit Timah, Kranji (*Ridley s.n.* in 1893).

Lith. conocarpus (Oudem) Rehd.

Cupule shallow saucer-shaped, thin; fruit conical, pointed; Gardens' Jungle, Changi, Seletar.

Lith. cyclophorus (Endl.) A. Camus

Cupule saucer-shaped, enclose $\frac{1}{3}$ of fruit; fruit flattened, very large, Gardens' Jungle, Seletar.

Lith. elegans (Bl.) Hortus ex Soepadmo

Cupule cup- to saucer-shaped, with tiny, pointed scales $\pm$ in rings; fruit ovoid, flattened; Bukit Timah.

Lith. encleisacarpus (Korth.) A. Camus

Cupule thin, completely enclosing the fruit; Gardens' Jungle, Seletar, Changi.

Lith. ewyckii (Korth.) Rehd.

Cupule saucer-shaped; fruit ovoid, conic; Bukit Timah, Gardens' Jungle, Seletar. Including *Lith. lamponga* Rehd.

Lith. hystrix (Korth.) Rehd.

Cupule saucer-shaped; fruit depressed, ovoid; Gardens' Jungle, Tuas.

Lith. lucidus (Roxb.) Rehd.

Cupule woody, saucer-shaped, very thick, with a broadly ringed rim protruding at the fruit base; fruit hemispheric; Seletar, Tampines, Bukit Timah.

Lith. wallichiana (Lindl. ex. Hance) Rehd.

Cupule cup- or saucer-shaped, rim thin, sessile; fruit round; Seletar, Jurong, Pulau Ubin.

Quercus argentata Korth.

Big tree; cupule with 6-9 prominent, slightly toothed flanges; fruit ovoid with a short tip; Gardens' Jungle, Bukit Timah (*Ngadiman 36398*).

63. MYRICACEAE

Myrica esculenta Buch.-Ham.

Small tree; leaves dark green, the margin serrate or entire, but coarsely toothed in seedling and sappling leaves; fruit a small red, then black drupe; common on the seashores and also in secondary forests; Tuas (*Goodenough* 3955), Changi, Jurong. Called *Myr. farquhariana* Wall. in Malayan literature. Vern. *Geliche*.

64. JUGLANDACEAE

Engelhardia serrata Bl.

Medium-sized tree; leaves even-pinnate, with 3–5 pairs of leaflets; fruits crowded in catkins, each is a small nut, but attached to the base of a large, 3-lobed wing; rare; Kranji (*Goodenough* 2833), Gardens' Jungle. Vern. *Sepoh Petri*, *Kedi*.

65. ULMACEAE

Key to the genera

1. Leaves entire, leathery, with 1 main vein; fruit flattened, each with 2 long and conspicuous styles *Gironniera*
2. Leaves toothed, thin, 3-nerved from the base; fruit rounded, each with 2 short styles *Trema*

Gironniera nervosa Planch.

Small or big tree; branches and leaves densely covered with short brown hairs; fruit a small or large drupe; common in woods; Tanglin, Chua Chu Kang, Water Catchment Area (*Chew* 28), Changi. Vern. *Kasap*.

Gir. parvifolia Planch.

Leaves glabrous, thin-leathery; in dense jungle, rare; Bukit Timah (*Ngadiman* 34908), Kranji.

Gir. subaequalis Planch.

Leaves glabrous, thick-leathery; less common; Tanglin, Chua Chu Kang.

Trema angustifolia (Planch.) Bl.

Shrub or small tree; leaves narrow, brownish hairy beneath; Changi, Chua Chu Kang, Tanglin.

Trema cannabina Lour,

Leaves glabrous beneath; berry yellow to orange; Tanglin, Chua Chu Kang (*Cantley's collector, s.n.*). Called *Tre. virgata* Bl. in Ridley's Flora.

Tre. tomentosa (Roxb.) Hara

Leaves ovate, acuminate, densely hairy beneath; berry green then blue-black; in waste ground; Tanglin, Changi (*Cantley's collector, s.n.*). Called *Tre. amboinensis* Bl. or *Tre. orientalis* Bl. in Malayan literature. 山黄麻

66. URTICACEAE

Key to the genera

1. Herbs,

2. Herbs often with sting hairs; leaves alternate *Laportea*

2. Herbs without sting hairs,

3. Leaves opposite; flowers cymose *Pilea*

3. Leaves alternate,

4. Flowers cymose *Elatostemma*

4. Flowers in axillary heads *Pouzolzia*

1. Shrubs, erect or climbing,

5. Erect; flower heads distinct on spikes; fruiting perianth dry ... *Boehmeria*

5. Scrambling or climbing; fruiting perianth fleshy,

6. Flowers yellow, in spikes or paniced clusters *Pipturus*

6. Flowers whitish, in axillary cymose heads *Poikilospermum*

Boehmeria nivea (L.) Gaud.

Shrubby, 1-2 m high; leaves broadly ovate, alternate. Ramie is a well-known fibre-yielding plant, native of E. and S.E. Asia. 苧麻

Laportea interrupta (L.) Chew

A weed, sometimes stinging; Tanglin, Serangoon (*Ridley s.n.* in 1897); formerly called *Fleurya interrupta* Gaud.

Elatostema repens Hall. f.

Small creeping plant; leaves alternate, very unequal at the base; native of S.E. Asia. Also called *Pellionia duvauana* N.E. Br.

Pilea microphylla (L.) Liebm.

Tiny herb, with many branches; leaves very small, arranged in two rows. A weed of American origin, common in waste spots in gardens.

Pipturus mollissimus Wedd.

Shrub, climbing; leaves elliptic-ovate, 3-nerved; flowers yellow; fruit white; rare; Tuas (No specimens available).

Poikilospermum suaveolens (Bl.) Merr.

Large scrambling and epiphytic shrub; leaves large; flowers whitish, in compound heads; in woods; Bukit Timah, Bukit Mandai, Nee Soon (Chew 32), Pulau Ubin. Vern. *Akar Murah*, *Ara Jankang*. Called *Conocephalus suaveolens* Bl. and *Con. amoenus* HK. f. in Ridley's Flora.

Pouzolzia indica Linn.

A low weed, not common, sometimes used as a vegetable; Bukit Timah, Chua Chu Kang (*Cantley s.n.*). Vern. *Ubai Ubai*.

67. MORACEAE

Key to the genera

1. Flowers and fruits borne inside a round, hollow receptacle *Ficus*
1. Flowers and fruits borne on a axis, usually forming a spike or head,
 2. Fruit a multiple one (*sorosis*),
 3. Fruit often very large (3–35 cm long) *Artocarpus*, *Parartocarpus*
 3. Fruit rather small (to 1.5 cm long) *Morus*
 2. Fruit not multiple,
 4. Leaves narrowed to the base; fruit berry-like wrapped round in the persistent sepals, white or yellow *Streblus*
 4. Leaves round or heart-shaped at the base; fruit pulpy, red to black *Antiaris*

Antiaris toxicaria Lesch.

A large evergreen tree, formerly found at Bukit Timah, now probably extinct. The fresh latex of this famous upas tree is extremely poisonous, and at one period was in use by the aboriginal tribes of the Malay Peninsula to tip their arrows. Vern. *Ipoh*.

Artocarpus altilis (Park.) Fosberg

The bread-fruit tree, a native of Polynesia, is variously called *Art. communis* J. R. and G. Forst. and *Art. incisus* Linn. f. in literature. Leaves pinnately lobed or incised; fruiting heads globose or ellipsoid, 20–30 cm across, smooth and green; cultivated locally as an ornamental, rather than a fruit tree. 麵包樹

Artocarpus anisophyllus Miq.

Large tree with huge pinnate leaves (over 60 cm long); fruiting head globose, with linear-oblong spines; in forest, Gardens' Jungle (*Ridley 4113*), Water Catchment Areas. Also called *Art. superbus* Becc.

Art. dadah Miq.

Bushy tree; fruiting head green or orange-red; in open woods; Bukit Timah (*Ngadiman 34682*), Chua Chu Kang, Tanglin, Changi, Water Catchment Areas. Called *Art. lakoocha* Roxb. in *Ridley's Flora*. Vern. *Tampang Ambong*.

Art. elasticus Reinw. ex. B1.

Large tree; leaves dimorphic, those in young trees deeply lobed, in adult trees ovate-oblong, entire; fruiting head dark yellow, oblong, to 16 cm long; common all over Singapore (*Sinclair 10683*). Called *Art. kunstleri* Hook. f. in *Ridley's Flora*. Vern. *Getah Terap*.

Art. gomezianus Wall. ex Tréc

Medium-sized tree; leaves oval-oblong; fruiting head smooth, round or ovoid, yellow and shining outside, inside rose pink, edible but sour; Bukit Timah; Bukit Mandai; Gardens' Jungle.

Art. heterophyllus Lamk.

The jack fruit is a native of S. India; leaves glabrous, entire; fruiting head of very large size, ellipsoid and yellow (30–90 x 25–50 cm). Called *Art. integrifolia* L. in literatures. Vern. *Nangka*, 波羅蜜

Art. integer (Thunb.) Merr.

Hairy small tree; leaves oblong, entire, but in young trees often 3-lobed; fruiting head ellipsoid (20–35 x 10–15 cm), golden yellow, strongly foetid; cultivated as a fruit tree, wild in Malaya. Vern. *Champedah*.

Art. lanceifolius Roxb.

Large tree, timber highly valuable; fruiting head oblong (15 cm long), brown, pubescent; Tanglin, Changi Gardens' Jungle, Bukit Timah (*Sinclair SFN 40249*). Vern. *Keledang*.

Art. maingayi King

Small tree; fruiting head oblong, 2–3 cm long, pubescent; rare; Tuas, Bukit Timah, Gardens' Jungle.

Art. rotundus (Houtt.) Panzer

The Monkey Jack is a large tree; fruiting head globose, yellow (7–11 cm across), covered with short spines and enclosing numerous seeds embedded in an orange coloured, sweep pulp, edible; Tanglin, Changi (*Ridley 3357*), Chua Chu Kang, Gardens' Jungle. Called *Art. rigidus* B1. in *Ridley's Flora*. Vern. *Tampuneh*.

Artocarpus scortechinii King

Tall tree; fruiting head oblong, to 8 cm or more long; Tanglin, Kranji (Ridley 11366).

Ficus annulata Bl.

Climber or tree; fig large, orange in colour; rare; Bukit Timah (Ridley 3783). The genus *Ficus* with nearly 40 species occurs in Singapore. They are either shrubs, or trees, or climbers. Their fruits are sought for by birds and fruit-bats which frequent the trees during the fruiting season. Most of the trees are of rapid growth with soft and valueless timber and with white or rarely yellow sap. The common fig (*Ficus carica* Linn. 無花菓) selling in supermarkets is native to the Mediterranean Region. Attempt to grow it in Singapore, according to Burkill, was not successful. Figs of one introduced species *F. roxburghii* Wall. are edible.

Fic. apiocarpa Miq.

Large climber; figs pear-shaped, large, orange-red; Tanglin, Kranji, Tuas, Gardens' Jungle (Corner 32787).

Fic. aurantiacea Griff.

Called *Fic. callicarpa* Miq. in Ridley's Flora. Large climber; stem flattened; figs large (5–6 cm long), pear-shaped, orange-red with white spots; Bukit Timah, Chua Chu Kang, Keppel Harbour (Corner s.n.).

Fic. bengalensis Linn.

Big tree with many aerial roots, some of them developing into massive pillar-roots, thus forming a "forest" of its own. Known as Indian Banyan, sometimes planted. Native of India.

Fic. benamina Linn.

Small to large tree; commonly planted, wild in Malaya. Vern. Waringin.

Fic. binnendijkii Miq.

Tree, formerly found at Chua Chu Kang, Mandai (Kiah 36543) and Bukit Timah.

Fic. botryocarpa Miq.

Called *Fic. miquelii* King in Ridley's Flora. Large tree, figs green with white spots, on simple or branched racemes; in woods; Bukit Timah (Ridley 5632).

Fic. bracteata Wall. ex Miq.

Medium-sized tree; leaves rusty beneath; figs orange; in swamp forest, sometimes near the sea; Changi, Chua Chu Kang, Seletar (Sinclair 24797).

Fic. caulocarpa Miq.

Called *Fic. infectoria* Roxb. in Ridley's Flora. Deciduous tree; figs small, round, whitish with red or orange dots; Bukit Timah, Alexandra Road (Corner s.n.).

Ficus chartacea Wall. ex King

Slender shrub; figs small, yellow; in thick woods; Gardens' Jungle, Changi (*Ridley 3407*), Bukit Timah, Bukit Mandai; the bark is used for string.

Fic. consociata Bl. var. *murtoni* King

Large shrub or tree; figs orange; more common near the coast; Changi, Ponggol, Seletar, Bukit Timah (*Burkill 4896*).

Fic. deltoidea Jack

Called *Fic. diversifolia* Bl. in Ridley's Flora. Small shrub, sometimes an epiphyte; leaves extremely variable (narrowly obovate to broadly obovate, and bilobed); in sandy places or mangrove swamps; Sungei Morai (*Sinclair 40178*), Changi, Kranji, Seletar.

Fic. dubia Wall. ex King

Tree; like *Fic. benjamina* but with larger leaves and figs; Bukit Timah, Tengah (*Goodenough 5636*).

Fic. elastica Roxb. ex Hornem.

The Indian rubber tree is sometimes planted; the young plant is often grown in pots for its thick glossy, evergreen leaves.

Fic. excavata King

Epiphytic small-leaved creeper; in swamp forest; Jurong (*Corner s.n.* in 1934), Seletar.

Fic. fistulosa Reinw. ex Bl.

Small bushy tree; figs green, in pairs on pedicels or in fascicles on stem tubercles; Bukit Timah (*Chew 12*), Changi, Chua Chu Kang.

Fic. fulva Reinw. ex Bl.

Called *Fic. chrysocarpa* Reinw. ex Bl. in Ridley's Flora. Small shrub, leaves hairy; figs golden hairy; common in open country; Nee Soon (*Chew and Whitmore s.n.*).

Fic. glandulifera (Wall. ex Miq.) King

Small tree with spreading crown; figs yellow; Bukit Timah (*Corner 34922*); Gardens' Jungle, Changi.

Fic. globosa Bl.

Bushy tree; figs dark green; in thickets; Bukit Timah; Bukit Mandai, Changi (*Ridley s.n.* in 1893), Tuas.

Fic. grossularioides Burm. f.

Called *Fic. alba* Reinw. ex Bl. in Ridley's Flora. Shrub; leaves large and lobed when young, smaller and entire in older trees, white beneath; figs yellow, becoming reddish; very common in open country; Mandai (*Hullett 193*).

Ficus heteropleura Bl.

Called *Fic. urophylla* Wall. ex Miq. in Ridley's Flora. A shrub, often epiphytic on other trees; figs small, orange; common; Tanglin, Bukit Timah (Ridley 5630), Chua Chu Kang. Vern. *Ara Supudeh*.

Fic. laevis Bl.

Epiphyte or small tree; rare; Bukit Timah, Chua Chu Kang (Ridley 8034), Pulau Ubin.

Fic. microsyce Ridl.

Shrub or epiphyte; fig globose; sessile, in pairs; Gardens' Jungle, Jurong, Sungei Hantu (Sinclair 39528).

Fic. obscura Bl.

Small tree; figs white; common; Bukit Timah, Bukit Mandai, Chua Chu Kang, Pulau Ubin (Ridley 5625). Also called *Fic. pisifera* Wall. ex Miq.

Fic. pellucido-punctata Griff.

Called *Fic. indica* Linn. in Ridley's Flora. One of the commonest wild species of strangling fig; Seletar, Pulau Ubin, Mandai (Corner 37127).

Fic. pisocarpa Bl.

Called *Fic. microstoma* Wall. ex King in Ridley's Flora. Tree: figs globose, in axillary pairs, green with a conspicuous yellow umbo; Geylang, Bukit Timah, Pasir Panjang.

Fic. pumila Linn. var. *awkeotsang* (Makino) Corner

Epiphyte from Taiwan, adherent to walls or tree trunks by aerial roots; remaining vegetative in lowland.

Fic. recurva Bl.

Epiphytic and rock-climber; Bukit Timah, Chua Chu Kang, Cluny Road (Ridley 6919).

Fic. religiosa Linn.

The Bodh-tree is commonly planted as roadside tree, but really also a strangling plant; native of India, sacred to both Hindus and Buddhists;
菩提樹

Fic. retusa Lin.

Tree; leaves often asymmetric with a blunt tip; figs pink to purple black; Geylang (Ridley 5680), Changi, Bukit Timah, Bajau. 榕樹

Fic. roxburghii Wall.

Small tree with very large leaves; native to E. India and Burma; producing large figs at base of the trunk which are edible and can be made into jam. The cultivated form is probably parthenocarpic, as it only bears female flowers within the fig.

Ficus sagittata Vahl

Called *Fic. ramentacea* Roxb. in Ridley's Flora. Climber, with yellow and bitter sap; figs nearly sessile, solitary or in pairs, globose, red, narrowed at base to a stalk; Bukit Timah, Chua Chu Kang (*Ridley 6731*), Tanglin.

Fic. sinnata Thunb.

Called *Fic. rostrata* Lamk. in Ridley's Flora. Epiphytic on trees, glabrous leaves often long-cuspidate; figs globose, orange coloured; Gardens' Jungle.

Fic. subgelderii Corner

Called *Fic. rigida* Miq. in Ridley's Flora. Epiphyte, glabrous; figs oblong, 1.5 cm across sessile on branch ends, in pairs, orange with white spots; Bukit Timah (*Ridley 5621*).

Fic. subsecta Corner

Called *Fic. procera* Reinw. ex Bl. in Ridley's Flora. Big tree; figs in pairs, globose, 1.5 cm long, sessile; Fort Canning (*Ridley 3396*), Changi.

Fic. variegata Bl.

Called *Fic. polysyce* Ridl. in Ridley's Flora. Large, deciduous tree, with conspicuous buttresses; figs pear-shaped, 2–4 cm across, long stalked, in dense clusters on the trunk and main branches; in secondary growth and forests; Gardens' Jungle, Chua Chu Kang (*Ridley s.n.*).

Fic. vasculosa Wall. ex Miq.

Small tree; leaves often cuspidate; figs pear-shaped, 1.5–2 cm long, light yellow then deep rose-red, stalked, on leafy twigs; often in gardens and hedges; Seletar (*Ridley 3403*); Changi, Bukit Timah.

Fic. virens Ait var. *glabella* (Bl.) Corner

Called *Fic. glabella* Bl. in Ridley's Flora. Big tree; figs small, white, with pinkish spots; Bedok, Bukit Timah, Chan Chu Kang (*Ridley 1602*).

Fic. villosa Bl.

Climber; figs clustered on axillary tubercles, yellow or red, hairy; common; Gardens' Jungle, Bukit Mandai, Changi, Chua Chu Kang (*Ridley 6202*).

Fic. xylophylla Wall. ex Miq.

Big epiphyte or small tree, strangling; figs 5–6 cm long, orange with dark spots; Geylang, Bukit Timah, Changi, Seletar, Mandai Road (*Corner 37136*).

Morus australis Poit.

The mulberry tree is native of China; the local strain (which appears to have female flowers only) produce fruits parthenocarpically. The trees are frequently visited by birds because of the edible fruits. 小葉桑

Parartocarpus venebisus (Zoll. & Mor.) Becc. ssp. *forbesii* (King) Jarrett

Tree; young twigs appressed with hairs, soon glabrescent; fruiting head with spines; Jurong (*Corner 21845*).

Streblus elongatus (Miq.) Corner

Big tree; heart wood dark brown, very durable; "The plant flowers readily even in seedling...; the fruit is soft white drupe enclosed in the four

thickened white sepals; these are sweet and edible and any pressure on them ejects the fruits to some distance so that if a bird attempts to eat them, the fruit is thrown out" (Ridley). Common in dry woods, Tanglin, Chua Chu Kang, Changi, Bukit Timah (CWL 14). Called *Sloetia elongata* Miq. in literature. Vern. *Tempinis*.

68. RHIZOPHORACEAE

Key to the genera

- A. Trees and shrubs of mangrove* forest; leaves opposite with interpetiolar stipules
 - B. Calyx 5–16 lobed; seedlings usually much less than 25 cm long before fallings,
 - C. Calyx 8–16 lobed; stem with knee roots *Bruguiera*
 - C. Calyx 5–6 lobed; stem with appressed stilt roots *Ceriops*
 - B. Calyx 4 lobed; stem supported by branched stilt roots; seedlings often over 30 cm long before falling *Rhizophora*
- A. Trees and shrubs of inland (usually secondary) forest,
 - D. Leaves alternate, without stipules; style 4 *Anisophyllea*
 - D. Leaves opposite, with interpetiolar stipules; style 1,
 - E. Calyx divides to the base, glabrous inside; stipules imbricate and overlapping.
 - F. Young branches solid *Carallia*
 - F. Young branches hollow *Gynotroches*
 - E. Calyx tubular, divides only at the tip, the tube hairy inside below; stipules flat, not imbricate *Pellacalyx*

Anisophyllea disticha Baill.

Shrub; branches spreading, pendulous; leaves of two kinds in 4 rows (with 2 large and 2 small, but almost in one plane); flowers yellowish white, tiny; fruit ellipsoid, red, 2–2.5 cm long. Common in woods, Tanglin, Changi (Ridley in 1892), Seletar and Bukit Timah.

Anis. griffithii Oliv.

Tree; leaves of one kind, lanceolate to elliptic, 5–10 cm long; fruit broadly ellipsoid, 4–5 cm long. Chua Chu Kang, Water Catchment Area (Corner s.n. in 1937).

* The mangroves are characteristic of coastal swampy regions in tropics, and sometimes also in subtropics. The seeds of some of the dominant trees, such as *Bruguiera*, *Ceriops*, *Kandelia*, *Rhizophora* (belonging to the Rhizophoraceae), and some other genera have the peculiar habit of germinating within the fruit wall ("vivipary") and hanging on the branches, then the fully developed seedlings fall downwards into the mud. The wood is hard, but difficult to season, often used as fuel. Tannin extracts can be obtained from the thick bark of many of the mangrove trees.

Bruguiera cylindrica (L.) Bl.

Formerly called *B. caryophylloides* Bl. Small to large tree; stem base buttressed, also with many knee roots; flowers greenish, calyx 8-lobed, petals with 2-3 bristles at the apex; seedlings 8-15 cm long before falling. A very common mangrove tree, formerly even occurred in River Valley Road, Serangoon, Seletar (*vide* Ridley), now still found in Changi, Tuas, Jurong, Kranjii and in many off-shore islands (Pulau Ubin, *Ridley* 366). Vern. name: *Pakau putih*.

Brug. gymnorhiza Lamk.

Calyx pinkish red, usually 12-14 lobed. Common, Jurong, Changi, Tuas (*Ridley* 4669).

Brug. parviflora W. & A. ex Griff.

Calyx green, 8-lobed. Jurong, Ulu Pandan (*Sinclair* 39660). Vern. name: *Lenggadi*.

Brug. sexangula (Lour.) Poir.

Formerly called *B. eriopetala* W. & A. Calyx usually 10-12 lobed. Bakau, Kranji, Jurong, Tanjong Pasir Laba (*Sinclair* 40175).

Carallia brachiata (Lour.) Merr.

Formerly called *C. lucida* Roxb. and *C. scortechinii* King. In forest, Bukit Timah, Nee Soon (*Kiah* 36546).

Ceriops tagal C. B. Robins.

Formerly called *C. candolleana* Arn. Tree; stem with appressed stilt roots up to 1 m tall; calyx deeply 5-6 lobed; seedlings 15-25 cm long before falling, sharply angular. In mangrove, Jurong, Changi (*Md. Shah* 868). Vern. name: *Tengah*.

Gynotroches axillaris Bl.

Tree; young branches hollow; leaves opposite, with numerous tiny green flowers in axils; fruits very small, red to black. In woods (Bukit Timah, *Ngadiman* 36119) and secondary jungles, common in water catchment area.

Pellacalyx axillaris Korth..

Tree, young branches hollow; leaves rusty pubescent beneath; flowers in axillary clusters, calyx tubular, 5-lobed. Bukit Timah, Tanglin, Nee Soon, Bukit Mandai (*Ridley* 3883).

Pell. saccardianus Scott.

Leaves glabrous beneath; calyx 4-lobed. In forest. Bukit Timah (*Holttum* 19785), Nee Soon.

Rhizophora apiculata Bl.

Formerly called *R. conjugata* L. in Malayan literature. Small or large tree; stem supported by stilt roots; flowers in pairs; seedlings up to 38 cm long

before falling. Common in mangrove swamps, Changi, Jurong (Ridley 3795), Seletar, Bajau.

Rhizophora mucronata Lamk.

Like the above species, but flowers 2–12, in 2–3 forked cymes, and seedlings 40–65 cm long before falling. In all mangrove swamps, Jurong, Bajau, Changi, Kranji, Pulau Brani (Ridley in 1890). Vern. name: *Belukup*.

69. COMBRETACEAE

Key to the genera

- A. Large trees; flowers small, without petals; drupe compressed, often winged *Terminalia*
- A. Small trees or shrubs, erect or climbing; flowers usually showy; petals present,
 - B. Erect small trees or shrubs; calyx-tube short; fruit cylindric, not winged *Lumnitzera*
 - B. Climbers; fruit winged
 - C. Calyx-tube slender, produced beyond ovary *Quisqualis*
 - C. Calyx-tube short *Combretum*

Combretum sundaicum Miq.

Climber or scandent shrub; leaves opposite; flowers green, in terminal dense compound racemes; fruit with 4-wings. In open bush and edges of forest, Bukit Timah (Ridley 10918), Changi, Jurong, Bedok.

Lumnitzera littorea (Jack) Voigt

Formerly called *Lum. coccinea* W. & A. Small tree or shrub, with scarlet flowers in dense racemes. In mangrove near the sea, Bajau, Serangoon, Jurong, Kranji (Ridley 334).

Lum. racemosa Willd.

As above species, but flowers white in elongate, racemes. In mangrove swamps. Jurong, Ulu Pandan (Corner 38160).

Quisqualis indica L.

Climber; flowers in terminal spikes, white then turning dark red. Native of the Old tropics, a garden escape in Singapore. Vern. *Akar Suloh*, 使君子

Terminalia catappa L.

A large tree; leaves deciduous, often turning red before they fall; flowers small, green, in spikes; fruit flattened ovoid, keeled all round, pinkish green; seeds edible (hence called 'Sea almond'). Common along the coast (Hullett 311), and planted as a roadside tree. Vern. *Ketapang*, 欖仁樹

Terminalia phellocarpa King

Large tree; fruit ellipsoid, mango-like, corky. In damp spots in woods, Mandai (*Corner 36987*), Bukit Panjang, Chua Chu Kang. Vern, *Mampelam babi*.

Term. subspathulata King

Large tree; fruit broadly 2-winged. Gardens' Jungle, Bukit Timah (*Ridley 10817*).

70. MYRTACEAE

Key to the genera

- A. Leaves opposite.
 - B. Leaves with a main midrib.
 - C. Twigs and leaves glabrous; fruit usually a large berry *Eugenia*
 - C. Twigs and leaves hairy.
 - D. Leaves large (10–15 cm long), conspicuously veined; fruit large *Psidium*
 - D. Leaves smaller (less than 10 cm long), faintly veined; fruit small (less than 1 cm across) *Decaspermum*
 - B. Leaves 3-nerved,
 - E. Tree with small (around 5 mm across) white flowers; leaves silvery beneath *Rhodamnia*
 - E. Shrub with showy (4–5 cm across) pink flowers; leaves woolly white beneath *Rhodomyrtus*
- A. Leaves alternate, spirally arranged; fruit capsular.
 - F. Leaves with 5–7 transverse veins *Melaleuca*
 - F. Leaves with a midrib,
 - G. Flowers in panicles, terminal *Tristania*
 - G. Flowers in dense spikes near the end of branches *Callistemon*

Callistemon citrinus Skeels

Also called *Cal. lanceolatus* Sweet. Shrub with linear leaves; flowers in dense spikes near the ends of young branches; stamens many in a flower, crimson red, the whole inflorescences with spreading stamens resembling a bottle brush (hence the common name). Native of Australia, sometimes planted as ornamental.

Decaspermum fruticosum J. R. & G. Forst.

Shrub or small tree; leaves small, narrowly elliptic; flowers white; berry rounded, flattened, purple. In secondary forest, Mandai, Jurong, Chua Chu Kang, Bukit Timah, Seletar (Md. Shah & Ahmad Shukor 2364).

Eugenia aquea Burn.

Small tree; flowers white, fruit transparent, rose or white, edible. Cultivated, probably a native of southern India. Vern. name: *Jambu Ayer*. This species, together with most of the following ones, has been segregated by some taxonomists from *Eugenia* (a genus thus defined as restricted to the New World tropics) into a separate genus, *Syzygium*. The alternative name for this species for example, is *Syzygium aqueum* (Burm.) Alston. Species of *Eugenia* (or *Syzygium*), in general, possess opposite, glandular punctate leaves with conspicuous submarginal veins. Those with larger (and edible) fruits are known as *jambu* or *jambo* by the Malays, and those with smaller fruits as *kelat*.

Eug. attenuata Koord. & Valet (= *E. penangiana* Duthie)

Tree; flowers white; fruit oblong (0.7 × 0.5 cm) pinkish. Kranji (*Corner* 29056), Bukit Timah.

Eug. avenis (Miq.) Henders. (= *E. scoparia* Duthie)

Tree; fruit globose (0.4 cm across). Only represented by an earlier collection (*Wallich* 3594).

Eug. caryophyllus Bull. & Harris (= *E. aromatica* Baill.)

The clove tree is a native of Moluccas, grown in Singapore in large scale in early 19th century but failed. The cloves of commerce are the dried unopened flower-buds.

Eug. cerina Henders. (= *E. punctulata* King)

Tree; flowers small; fruit oblong ovoid (1.4 × 0.8 cm), greenish.

Eug. claviflora Roxb.

Tree; flowers creamy white; fruit oblong-globose (2 cm long), crimson then black. Labrador, Pasir Panjang (*Corner* s.n.).

Eug. conglomerata Duthie

Tall tree; flowers white; fruit depressed globose (1.2 cm across), dark purplish. Botanic Gardens (*Ridley* 5073).

Eug. cumingiana Vidal (= *E. acuminatissima* Kurz) (= *Acmena acuminatissima* Merr. & Perry)

Tree; flowers small, white.

Eug. cumini Druce (= *E. jambolana* Lamk.)

Tree; flowers white to rosy pink; fruit oblong (2 × 1.7 cm), black. Vern. *Jambolan*.

Eugenia densiflora Miq.

Small tree; flowers pink; fruit globose (2.5 cm across), pinkish. Changi, Siglap, Bukit Timah. Vern. Name: *Kelat Jambu*.

Eug. duthieana King

Tree; flowers white; fruit globose or slightly pear-shaped (2 cm long).

Eug. filiformis Duthie

Small tree; flowers white with long slender pedicles; fruit globose (1.5 cm across) greenish white. Gardens' Jungle, Changi, Seletar.

Eug. glauca King

Tree; flowers sessile; fruit globose (2.5 cm across) green, faintly ridged. Bukit Timah (Henderson 34780).

Eug. grandis Wight

A big tree; flowers white; fruit globose (1.2–1.5 cm across) green, leathery. Common on sandy and rocky shores, and widely planted along the roads. Vern. name: *Jambu Ayer Laut*.

Eug. griffithii Duthie (= *E. subrufa* King)

Tree; flowers white; fruit globose (2 cm across); in woods, Changi, Seletar, Bukit Timah.

Eug. jambos L.

Small tree; flowers large, white; fruit dull yellow, tinged pink, depressed globose (–5 cm across). Long cultivated of doubtful origin. Vern. names: *Jambu Mawar*, *rose apple*,

Eug. javanica Lamk.

Small tree; flowers white; fruit pear-shaped (–6 cm long and broad), waxy white. Native of Java, Nicobars and Burma, sometimes cultivated.

Eug. longiflora F. – Vill. (= *E. lineata* Bl.)

Tree; flowers white or pale green; fruit oblong (1.3 × 1 cm), opaque white. Very common in secondary jungles.

Eug. linocieroides King

Small tree; flowers white; fruit oblong 1 cm long). Resembles *E. longiflora* but differs from it in the more angled calyx tube.

Eug. malaccensis L.

Tree; flowers brilliant pink; fruit large, pear-shaped (5–7.5 cm long), white or pink. Cultivated for the edible fruit. Vern. name: *Jambu bol*.

Eug. michelii Lam. (= *E. uniflora* L.).

A bush from Brazil, occasionally planted.

Eugenia microcalyx Duthie

Tree; flowers creamy white; fruit small (0.4–0.5 cm across), white tinged red. Bukit Timah, Bukit Mandai (*Ridley* 10410).

Eug. muelleri Miq. (= *E. venulosa* Duthie)

Tree; flowers white; fruit globose (1.3 cm across), green. Tampines, Bukit Mandai.

Eug. ngadimania Henders.

Small tree; fruit ovoid (2 cm long) dark green, flushed dull purplish red at apex. Bukit Timah (*Ngadiman* 36129).

Eug. nigricans King

Tall tree; flowers white. Bukit Timah (*Corner* 34988).

Eug. oblongifolia Duthie

Small tree; flowers creamy white; fruit globose (1.7 cm across), pale green. Gardens' Jungle, Chua Chu Kang.

Eug. oleina Wight (= *E. acuminatissima* Kurz, = *E. myrtifolia* Roxb.)

Small tree, flowers white; fruit obovoid, small (0.5 × 0.7 cm), dark red. In river banks and near the sea. Seletar, Jurong (*Ridley* 4985).

Eug. pachyphylla Kurz

Small tree; flowers white, fruit obovoid (2.5 × 2 cm).

Eug. palembanica Merr. (= *E. lepidocarpa* Kurz)

Small tree; flowers white; fruit urn-shaped (2 cm across), ribbed. Common on the sea coast and inland. Tanglin, Kranji, Changi.

Eug. papillosa Duthie

Tall tree; flowers white; fruit globose (2.5 cm across) green; in fresh water swamp forest.

Eug. polyantha Wight

Slender tree; flowers white; fruit globose (1.2 cm across), pink to purple. In inland forest.

Eug. pseudocrenulata Henders. (= *E. crenulata* Duthie. non Willd.)

Small tree; fruit depressed globose (1 × 1.5 cm). Seletar (*Ridley* 6232), Mandai.

Eug. pseudoformosa King

Small tree; flowers pink; fruit oblong-globose (2 cm across).

Eug. pseudosubtilis King

Tree; flowers yellow; fruit depressed globose (1.5 cm across), pink to black. In fresh water swamp forest.

Eugenia pustulata Duthie

Small tree; flowers greenish yellow; fruit oblong globose (1.4 × 0.6 cm).

Eug. ridleyi King

Tree; flowers pale green; fruit globose (to 2 cm across), dull green.

Eug. rugosa Merr.

Tree; flowers white; fruit broadly obconic (1 × 0.75 cm). Bukit Timah (Corner 34605), Jurong.

Eug. spicata Lamk. (= *E. zeylanica* Wight)

Small tree; flowers white; fruit obong (0.6 cm long), white. In sandy spots near the sea; Tanglin, Changi, Kranji, Tuas.

Eug. subdecussata Duthie

Tall tree; flowers greenish yellow; fruit globose (2 cm across), green, flushed dull pink. Gardens' Jungle, Changi, Tuas.

Eug. syzygioides Henders. (= *Eug. cymosa* Wight)

Small tree; flowers white, fruit small, round (1 cm across), cherry red. In secondary growth, Changi, Pulau Tekong.

Eug. tumida Duthie (= *E. pyrifolia* Wall.)

Like *E. longiflora*, but fruit round, larger (1.5–2 cm across), leathery, green. Cluny Road, Changi.

Melaleuca cazuputi Powell (= *M. leucadendra* L.)

Tree, with twisted trunk; bark whitish, papery flaky; leaves with 5–7 longitudinal veins; flowers white, in spikes. Seletar (Sinclair 40633). Indigenous, but sometimes planted. A medicinal oil, known as Cajeput oil, is distilled from the leaves. Ridley observed that "Kampong Gelam may perhaps take its name from trees formerly growing here". Vern. name: *Gelam*, 白千層

Psidium guajava L.

Small tree; branches drooping; fruit fleshy, with numerous seeds inside, edible. Native of tropical America, often planted in gardens. Vern. names: *Guava*, *Jambu batu*, 番石榴

Rhodamnia cinerea Jack (= *R. trinervia* Bl.)

Small to medium-sized tree; leaves with 3 main nerves, the lower surface shining silvery if growing in open country (hence the name "silver back tree"); flowers small, white; berry red to black. Very common in secondary forests (Changi, Hullett 315).

Rhodomyrtus tomentosa (Ait) Hassk.

Bushy shrub; leaves 3-nerved, whitish woolly; flowers prominent, pink; berry purplish, edible. Common in sandy spots. Vern. *Kemunting*, 桃金娘

Tristania merguensis Griff.

Tree; leaves spirally arranged; flowers small, yellow, in axillary clusters; capsules small, compressed globose, 1–1.2 cm across, half immersed in the calyx cup. Bukit Timah (*Corner s.n.*).

Tristania sumatrana Miq.

Small tree. Once collected from Pulau Ubin (*Ridley 4970*).

71. LECYTHIDACEAE

Key to the genera

- A. Leaves very large (over 30 cm long), in 2 rows; flowers yellow ... *Bertholletia*
- A. Leaves relatively small, spirally arranged; flowers white, pink or red,
 - B. Inflorescences arising from persistent, much branched, woody inflorescence-stalks on trunk *Couroupita*
 - B. Inflorescences usually arising from young or old branches,
 - C. Fruit one-seeded *Barringtonia*
 - C. Fruit many-seeded *Planchonia*

Barringtonia asiatica (L.) Kurz

Large coastal tree; leaves, flowers and fruits all very large; flowers white, in pendulous spikes; fruit with a broad square base, tapering to the 2 persistent sepals. Changi, Kranji (*Ridley 14453*), Pulau Tekong. Vern. *Putat Laut*, 棋盤腳樹

Barr. conoidea Griff.

Large shrub, in tidal rivers; fruit conical with 8 strong flanges round the base. Seletar, Chua Chu Kang (*Ridley 2057*).

Barr. macrostachya (Jack) Kurz

Small tree; fruit ovoid or ellipsoid, smooth. In dry woods, Bajau (*Ridley s.n.* in 1894). Vern. *Putat hutan*.

Barr. racemosa (L.) Spreng.

Small tree; fruit egg-shaped, green, in damp places near tidal rivers or the sea. Tanglin, Kranji, Geylang (*Ridley 8051*), Sentosa. Vern. *Putat Kampong*.

Barr. reticulata (Bl.) Miq.

Large shrub; fruit oblong, 4-angled, narrow to the base. In sandy woods near the sea, Tuas, Jurong, Macpherson Road (*Ridley 8419*).

Bertholletia excelsa HBK.

Large tree, native of the Amazon region, rarely planted. The large seeds (called 'Brazil nuts'), rich in oil and very nutritious, are imported..

Couroupita guianensis Aubl.

Native of S. America, planted for the showy flowers on trunk. Cannon-ball-like (thus 'Cannon Ball Tree') fruits are occasionally formed.

Planchonia grandis Ridl.

Big tree; buttressed; flowers green, in terminal spikes, fruit globose. Gardens' Jungle (Ridley 6423, type), once collected.

72. MELASTOMATACEAE*

Key to the genera

- A. Herbs, sometimes semi-woody below,
 - B. Small herbs, erect or creeping; flower parts in 3s; fruits capsular *Sonerila*
 - B. Tall herbs, sometimes soft woody below; stems erect, hairy; flower parts in 4s; fruit a black berry *Clidemia*
- A. Shrubs or trees,
 - C. Shrubs,
 - D. Twining or climbing, stems slender
 - E. Inflorescence short, few-flowered, on leaf axils *Macrolenes*
 - E. Inflorescence paniced, terminal *Dissochaeta* & *Diplectria* (*Anplectrum*)
 - D. Erect shrubs,
 - F. Mostly epiphytic; stems more or less fleshy *Medinilla*, *Pogonantha*, *Pachycentria* & *Plethiandra*
 - F. Usually terrestrial; stems not fleshy,
 - G. Stems covered with chaffy scales; leaves entire; flowers large (5-6 cm across), 3-5 together *Melastoma*
 - G. Stems glabrous; leaves with finely toothed margins; flowers small, 5-15 in bundles *Ochthocharis*
 - C. Trees,
 - H. Leaves with a single midrib; berry usually 2-seeded *Medinilla*
 - H. Leaves 3-nerved; berry many-seeded *Pternandra*

Clidemia hirta Don

Hairy herb, sometimes soft woody below; flowers white, in axillary clusters; fruit a round berry, black. A common weed on roadside or in forest edge, native of South America, naturalized.

* Thanks to Mr J.F. Maxwell for going through most of the plants listed under this family.

Diplectria glauca (Jack) Veldk.

Slender climber; flowers white or purple, in panicles. Also called *Anplectrum glaucus* Triana or *Backeria glauca* Bakh. f. In woods, Gardens' Jungle, Bukit Timah, Water Catchment Area.

Diplectria viminalis (Jack) O.K.

Formerly called *Anplectrum pallens* Bl. Slender climber; flowers white. Seletar (Ridley in 1889), Pulau Ubin.

Dissochaeta annulata Hook. f. ex Triana

Climber; flowers rose pink, in large panicles (to 15 cm long). In edge of forests, or on tall trees, Bukit Timah (Goodenough in 1889).

Dis. celebica Bl.

Lower leaf-surface rusty; flowers pale pink. Common; Bukit Timah (Ridley 2025), Water Catchment Area.

Dis. gracilis Bl.

Slender climber; flowers white. Bukit Timah (Burkill 3123), Bukit Mandai.

Dis. intermedia Bl.

Bukit Mandai, Chua Chu Kang (Ridley 6056).

Dis. pallida Bl.

Water Catchment Areas, Bukit Mandai, Bukit Timah (Ridley 176).

Dis. punctulata Hook. f. ex Triana

Bukit Timah (Goodenough 341), Bukit Mandai, Seletar, Ponggol.

Macrolenes nemorosa (Jack) Bakh. f.

Formerly called *Marrumia nemorosa* (Jack) Bl. A climber, thickly covered with rusty hair; flowers with 4 pink petals and 8 (4 longer and 4 shorter) stamens. On borders of forests.

Macro. echinata Nand.

Ang Mo Kio (Ridley 258).

Medinilla radicans (Bl.) Bl.

Small bushy or scrambling shrub, epiphytic on trees or rocks; stems not tubercled; flowers white; fruit deep red or purple. In mangroves or damp forests, Bukit Mandai (Goodenough 1637), Kranji, Bajau.

Melastoma malabathricum L.

A very common shrub all over the island, in open places; flowers light to dark pink, showy. Misleadingly called the "Singapore Rhododendron". Vern. Sendudok, 野牡丹

Memecylon amplexicaule Roxb.

Small tree. Bukit Timah (*Ngadiman 37009*). *Memecylon* species, in general, is rather similar to *Eugenia* spp. (Myrtaceae), but can be distinguished by its small blue flowers with 8 short stamens. In *Eugenia*, the flowers are green, white, yellow or red, and the stamens are long and numerous.

Memecy. caeruleum Jack

Shrub. In sandy open spots. Singapore (*Furtado 34854*).

Memecy. cantleyi Ridl.

Shrub. In woods, Gardens' Jungle (*Ridley 13012*, type).

Memecy. edule Roxb.

Shrub or small tree; leaves elliptic or ovate. In dry spots near the sea (*Henderson 35783*). Vern. *Dalek ayer*.

Memecy. edule Roxb. var. *ovatum* Clarke

A variety with round ovate leaves (*Ridley 9565*).

Memecy. fruticosum King.

Epiphytic shrub. Singapore (*Ridley 5753*).

Memecy. garcinioides Bl.

Small tree. In lowland forests; Seletar, Bukit Timah (*Ngadiman 34975*).

Memecy. oleaefolium Bl.

Slender tree. In woods; Gardens' Jungle (*Ridley 6414*).

Ochthocharis borneensis Bl.

Small shrub; flowers small, white, with 4 white or pale pinkish petals, about 10-15 in a cluster. In tidal rivers; Seletar (*Ridley 6221*).

Ochth. javanica Bl.

Small shrub. In tidal mud; Changi, Kranji (*Goodenough 2008*).

Ochth. paniculata Korth.

Low shrub. *Wallich 4083* said to be collected from Singapore.

Pachycentria constricta (Bl.) Bl.

Glabrous epiphytic shrub; roots tuberous, woody; flowers pale pinkish, in panicles. Sungei Morai, Seletar (*Ridley in 1890*). Formerly called *Pachy. tuberculata* Korth.

Pachy. maingayi (Clarke) Maxw.

Small bushy epiphyte; flowers and fruit both pink. Sungei Buloh, Chua Chu Kang (*Ridley in 1894*), Bukit Timah. Formerly called *Medinilla maingayi* Clarke.

Plethiandra sessiliflora (Cogn.) Burk.

Epiphytic spreading shrub; flowers waxy pink, solitary or in axillary fascicles. In mangrove swamps; Tuas, Seletar, Kranji (*Ridley in 1892*), Sungei Buloh.

Pogonanthra pulverulenta Bl.

Epiphytic spreading shrub, scaly; flowers small, white. Pulau Ubin, Kranji (*Ridley 276*), Bukit Timah.

Pternandra coerulescens Jack

Small tree; flowers in axillary cymes or rarely in terminal panicles; petals light blue; fruiting calyx marked with square or oblong depressions. Tanglin, Changi (*Ridley in 1894*), Chua Chu Kang.

Ptern. echinata Jack

Bushy tree; flowers white, often deeply tinted with light blue or lilac; fruit echinate. In woods, common; Changi, Bukit Timah (*Goodenough 352a*). Vern. *Serai manaun*.

Ptern. tuberculata (Korth.) Maxw.

Tree. MacRitchie (fide Maxwell).

Sonerila begoniifolia Bl.

Small herb, densely hairy to 15 cm tall; flowers white or pink, in clusters. In damp woods; Chua Chu Kang, Bukit Mandai (*Ridley 2005a*).

Soner. heterostemon Naud.

A glabrous herb. In forests; Bukit Timah (*Hullett 449*), Chua Chu Kang.

73. LYTHRACEAE

Key to the genera

- A. Trees and shrubs, near or in the sea,
 - B. Shrubs; fruit a capsule, 1-chambered *Pemphis*
 - B. Trees; fruit berry-like, 10–15-chambered *Sonneratia*
- A. Inland trees and shrubs,
 - C. Flowers small, unisexual, apetalous, in terminal panicles ... *Crypteronia*
 - C. Flowers medium to large, bisexual,
 - D. Calyx-tube swollen on one-side, slightly curved *Cuphea*
 - D. Calyx-tube straight,
 - E. Shrubs, flowers relatively smaller, sepals and petals 4 *Lawsonia*

- E. Trees, flowers large and showy, sepals and petals usually 6 *Lagerstroemia*

Cuphea ignea DC.

Small bush, much branched; calyx orange red; petals absent. Native of Mexico, sometimes cultivated.

Crypteronia cumingii (Planch.) Endl. var. *griffithii* (Clarke) Osinga

Tall tree; branches with swollen nodes; flowers very small, in large terminal panicles. In Water Catchment Areas, Bukit Timah (*Ngadiman* 36472). Vern. *Talinga badak*.

Lagerstroemia speciosa (L.) Pers.

Also called *Lag. flos-reginae* Retz. Tree, with spreading branches; flowers pale to deep pink. Native of S.E. Asia, widely planted in gardens and along the roads, easily propagated by cuttings or marcoting. Vern. Bungor, 大花紫薇

Lag. indica L.

Shrub or small tree; leaves smaller than the above species; flowers white, rose or pink. Native of the Orient, sometimes cultivated. Vern. *Crepe myrtle*, 紫薇花

Lawsonia inermis L.

Shrub or small tree. Native of W. Asia, sometimes cultivated as a hedge plant. The leaves are the source of a red dye. Vern. Henna. 指甲花

Pemphis acidula J.R. & G. Frost.

A coastal shrub, often partly submerged in sea-water during high tide; leaves fleshy, thick; flowers white, with short or long styles. Changi (*Md. Shah* 864), St. John's Island.

Sonneratia alba J. Smith

Tree, near or in the sea, with upright conical breathing roots around the trunk; leaves broadly elliptic; flowers large with 6 white petals; stamens white. Tuas, Changi, Jurong, Pulau Brani (Ridley in 1907). Vern. *Bedada*.

Sonn. caseolaris (L.) Engl.

Formerly called *Sonn. acida* Linn. Tree; leaves narrowly elliptic; stamens pinkish red. In tidal river, Balestier plain, Changi (*Sinclair* 40023).

74. PUNICACEAE

Punica granatum L.

The pomegranate tree is a native of West Asia. A dwarf form is commonly planted in pots or on the ground for its bright scarlet (rarely yellow) flowers and handsome, edible fruits. Vern. *Dalima*, 石榴, 安石榴

75. ONAGRACEAE

Ludwigia adscendens (L.) Hara

Formerly called *Jussiaea repens* L. Herb, prostrate or ascending, often floating in streams with swollen pithy floats; petals creamy white. Tanglin (Ridley 16697).

Ludwigia erecta (L.) Hara

Erect herb, nearly glabrous; petals pale yellow. Tanglin, Tanjong Katong (Cantley 2871).

Lud. octovalis (Jacq.) Raven spp. sessiliflora (Mich.) Raven

Formerly called *Jussiaea suffruticosa* L. Robust herb, shrubby, densely covered with spreading hairs; petals yellow. Serangoon, Kallang.

Lud. peruviana (L.) Hara

Formerly called *Jussiaea speciosa* Ridl. Shrub, to 3 m tall; petals bright yellow. Ditches and swamps, Serangoon, Balestier.

Lud. prostrata Roxb.

Small annual herb, subglabrous; petals yellow, narrowly spoon-shaped. In wet spots, Tanglin.

76. HALORAGACEAE

Haloragis chinensis Merr.

Small herb, leaves opposite; flowers yellow, very small. Known only from a small spot near the sea, Lim Chu Kang (Sinclair 40276).

77. TRAPACEAE

Trapa bicornis Osb. var. *cochinchinensis* Gluck ex Steenis

Floating herb, occasionally growing in ponds; fruit (also called "water chest-nut" not to be confused with the corm of *Eleocharis dulcis* Trin. of the Cyperaceae, both are imported from China) with two conspicuous horns, edible. 菱, 菱角

78. THYMELAEACEAE

Key to the genera

- A. Fruit capsular; petaloid appendages usually distinct and always pubescent *Aquilaria*
- A. Fruit drupaceous; petaloid appendages if present, always glabrous,
 - B. Woody climbers; inflorescence usually provided with 2 leafy bracts on each branch; ovary densely pubescent,

- C. Stamens in 2 series; style short *Enkleia*
- C. Stamens in 1 series; style several times as long as ovary ... *Linostoma*
- B. Erect shrub; inflorescence without leafy bracts;
ovary glabrous *Wikstroemia*

Aquilaria malaccensis Lamk.

Big tree; leaves glabrous beneath; flowers yellowish green, in branched umbels; fruit a small woody capsule. In the interior of old trees are found dark coloured resinous, fragrant masses for burning as incense. These resinous masses are called eagle-wood. Bukit Timah, Kranji, Gardens' Jungle (*Ridley in 1894*). Vern. Geharu, 沉香

Aquil. hirta Ridl.

Small tree; leaves tomentose beneath. Bajau (*Ridley 3837*, type!).

Enkleia malaccensis Griff.

Slender woody climber, densely covered with reddish hair; branches sometimes hook-like; leaves alternate; panicles spreading. In woods, Gardens' Jungle (*Sinclair 40196*), Bukit Timah.

Linostoma pauciflorum Griff.

Lofty woody climber; leaves opposite or nearly so; flowers light green, pendulous. Gardens' Jungle, Changi (*Ridley 1858*), Bukit Timah.

Wikstroemia ridleyi Gamble

According to Ridley (Fl. Mal. Pen. 3:146) this plant was "Brought from Penang in 1890, ran wild for some time in Tanglin, Singapore". Now still can be found in certain spots in Water Catchment Areas.

79. GONYSTYLACEAE

Gonystylus maingayi Hook. f.

Small to large tree; flowers in terminal inflorescence; capsule ovoid, thick-woody. Gardens' Jungle, Bukit Mandai, Chua Chu Kang, Water Catchment Areas, Bukit Timah (*Ridley in 1894*).